



US006544088B1

(12) **United States Patent**
Dubois

(10) **Patent No.: US 6,544,088 B1**
(45) **Date of Patent: Apr. 8, 2003**

(54) **SELF ADJUSTING NEUTRAL BUOYANCY
COUNTERMEASURE AND SYSTEM**

6,142,092 A * 11/2000 Coupland

114/331

* cited by examiner

(75) **Inventor:** Neil J. Dubois, Cranston, RI (US)

(73) **Assignee:** The United States of America as
represented by the Secretary of the
Navy, Washington, DC (US)

Primary Examiner—Ed Swinchart*(74) Attorney, Agent, or Firm*—James M. Kasischke;
Michael F. Oglo; Jean-Paul Nasser

(*) **Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(57) **ABSTRACT**

An underwater self adjusting displacement device includes a sealed housing having an exterior wall and an inner component area, the exterior wall having an opening formed therein. A sealing plug is slidably seated in the opening of the exterior wall, and an actuator mechanism selectively adjusts the sealing plug within the opening, thereby adjusting a total displacement of the sealed housing. The displacement device is incorporated into any substantially neutrally buoyant underwater deployable device such as an acoustic countermeasure device or an oceanographic sensor device. Further, the deployable devices may be deployed individually or as a field due. The displacement device requires less weight and weight within an overall deployed device, enabling large deployments and performance enhancements.

(21) **Appl. No.:** 09/977,905

(22) **Filed:** Oct. 10, 2001

(51) **Int. Cl.⁷** B63B 22/16

(52) **U.S. Cl.** 441/6

(58) **Field of Search** 114/312, 125;
441/6, 7, 11, 21, 28, 29

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,899,204 A * 5/1999 Cochran 128/205.23

11 Claims, 3 Drawing Sheets

